

# Estimating Products and Quotients

**R 1-6**

Here are two different methods to estimate products and quotients.

**Use Rounding** Round each factor to its greatest place. Multiply or divide mentally. When both numbers are rounded up, you have an overestimate. When both numbers are rounded down, you have an underestimate.

Estimate  $4,698 \times 165$ .

$$\begin{array}{r} 4,698 \rightarrow 5,000 \\ \times 165 \rightarrow \times 200 \\ \hline 1,000,000 \end{array}$$

Since both numbers were rounded up, this is an overestimate.

**Use Compatible Numbers** Think of numbers that are close to the actual ones, but are easier to use. Multiply or divide mentally.

Estimate  $718 \div 89$ .

$$\begin{array}{r} 718 \div 89 \\ \downarrow \quad \downarrow \\ 720 \div 90 = 8 \end{array}$$

72 and 9 are compatible numbers.

So,  $718 \div 89 \approx 8$ .

Estimate each answer. Tell which method you used.

1.  $4 \times 19$  \_\_\_\_\_
2.  $17 \times 59$  \_\_\_\_\_
3.  $6,192 \times 11$  \_\_\_\_\_
4.  $781 \div 7$  \_\_\_\_\_
5.  $289 \div 29$  \_\_\_\_\_
6.  $425 \div 94$  \_\_\_\_\_
7.  $7,248 \div 82$  \_\_\_\_\_

8. **Number Sense** Dean estimated  $39 \times 28$  by rounding. He got 1,200 as his estimated product. Is this an overestimate or underestimate? How do you know?

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